

## STUDY OF RELATIONSHIP BETWEEN SUPPLY CHAIN MANAGEMENT STRATEGY WITH LOGISTICS PERFORMANCE AND ORGANIZATIONAL PERFORMANCE

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### **Abstract:**

The present study reveals relationship between supply chain management strategy with logistics performance and organizational performance (marketing and financial) as the main objective of this study. We considered supply chain management strategy based on universality and integration, i.e., their organizational performance (marketing and financial) will be increased with implementing this strategy in production organizations. The strategy based on the universality and integration includes three parts: universality and integration with customers, suppliers, and in intra-organizational processes and activities. In this study, logistics performance called fundamental item for evaluating supply chain management strategy performance. We presented a logistics performance model and explained six hypotheses proportional with this model, based on which, all hypotheses were tested in 99% level and then, each six hypotheses were confirmed. All managers in active and large productive companies in Khuzestan Province are considered as subjects of this study. A number of 150 managers are selected as sample through random sampling method. The present study carried out through the use of questionnaire and SPSS software, correlation statistics test and multiple regressions have also been used for the data analysis. The results of correlation test showed that supply chain management strategy has significant relationship with the logistics performance and organizational performance (marketing and financial) and has the highest relationship and correlation with the logistics performance. Due to the observance to the multiple regression results, we found that financial performance of the organization feels the highest effect from marketing performance and marketing performance also feels the highest effect from the logistics performance and consequently, implementation of supply chain management strategy is obtained. So, it can be said that organizational performance is increased as a result of implementation of supply chain management strategy.

**Keywords:** *Supply Chain Management, Supply Chain Management Strategy, Logistics Performance, Organizational Performance (Marketing and Financial)*

### **Introduction:**

The new approach which has overshadowed in the world of trade is based on customer and his requirements. That is to say that providers of products and services, moreover paying due attention to the quality of presented product and services, consider all activities which will result in creating value added to customer. (Watson, 2002)

On the other hand, production and economic institutions, moreover considering organization and internal resources, need to the management of foreign resources related to the organization. This subject is more tangible in competitive field especially for attaining high market share. Accordingly, all activities of planning supply and demand, providing materials, producing product or presenting services, preserving goods, controlling inventory and balance, distributing, delivering, etc., which were carried out previously in an organization, have been transferred to the supply chain. Managing and coordinating all these activities is the key issue in a supply chain. Supply Chain Management (SCM) carries out this activity in the best way, in which, customers can receive quality goods and services confidently with the appropriate speed and quality and also with the least price. But for the implementation of this activity, supply chain management should be taken into consideration comprehensively. This issue should also be considered that all duties and activities, which are carried out in the length of supply chain, should be managed strategically provided that performance of all sub, individual and organizational systems should be increased. (Tan, et al, 1998)

However, a comprehensive supply chain management strategy should be taken into consideration as well. A comprehensive strategy is the strategy that can bring about universality and integration internal activities of a production organization and universality and integration between extra-organizational suppliers and customers with the aim of creating value added for final customer coupled with bringing about a superior performance in terms of quality and organizational performance. (Fuente, 2008)

***Innovation:***

This study includes “innovation” for three reasons: 1. To study effect of supply chain management activities on organizational performance, 2. Considering strategy based on universality and integration which includes three types of activity (universality and integration with customers, suppliers and intra-organizational activities and processes) as a supply chain management strategy and its effect on performance of the organization) 3. Logistics performance is basis of evaluating supply chain management strategy performance.

***Statement of the Issue:***

How a production organization can attain a superior organizational performance?

The ultimate goal of a strategy is this: to create a superior performance for a long time at the organization. (Kluyver and Pearce, 2006)

Attaining this superior performance in a production organization, the organization should able to create universality and integration among participators of supply chain. Therefore, production organization should select a supply chain management strategy for attaining these objectives. This strategy should emphasize on this issue that: “How can coordination and integration be established among all the processes and activities carried out in the length of supply chain with the aim of presenting better services and products to final customers (creating value added for final customer) and also increasing individual performance of members of the supply chain. Producing, purchasing, selling, offering logistics services, presenting information timely to the supply chain members is a sample of activities which should be coordinated and integrated. (Kenneth W, e.t. Al, 2008)

Logistics and supply chain form one unit and managers should concentrate all their attention and resources on logistics, as a part of duties of supply chain management, for creating stable competitive advantage in the supply chain. (Council, 2007) Moreover, managers should take advantage of logistics performance for showing superiority of supply chain management. Implementing Supply Chain Management (SCM) will result in improvement of logistics performance. (Ho, et al, 2002, Oliver, et al, Bowersox et al, 2000)

But is performance of organization improved? Answering to this question is our main objective in this study.

***Significance and Necessity of Conducting Research:***

After 1990's, competition has been intensified and all markets are moving towards globalization. Presenting product or service in appropriate time, suitable place, logical amount with the least possible price to the final consumer is the most important challenge of managers in the production companies. For this purpose, organizations have grasped that increasing organizational effectiveness is not enough; rather, competitive advantage should be created through the supply chain. So, understanding and implementing a supply chain management strategy is felt necessarily for remaining in this world with the severity of competition coupled with increasing profitability. The logistics Management Association defines final objective of a supply chain management strategy as follows: coordinating and integrating information in whole supply chain to increase lengthy performance of organization with the aim of creating an effective competitive advantage. (Shong Li, 2006)

According to the Resource-Based View (RBV), there is a close relationship between activities of supply chain management and competitive advantage. Supply chain management is a source of creating competitive advantage and superior performance because cooperation and collaboration, lengthy relationship of memberstogether with integration of processes from different aspects will affect performance of the organization. Cooperation and collaboration of members with one another and integration of processes will reduce time and cost and increase quality and flexibility in presented product or service. Since these valuable resources are inimitable, rare and invisible, they will cause creation of competitive advantage. Moreover, the organization will enable to omit all those activities, which have not any value added, through resorting to the universality and integration of processes, based on which, quality of products will be increased, empowerment of products' delivery will be assured and sales growth obstacles will be reduced noticeably. (SooWook Kim, 2009)

The organizations, which are after reaching to a competitive advantage, should be able to add their customers continuously with the aim of increasing their financial and marketing performance. Despite significance of activities of supply chain management in terms of cost reduction, it is for a long time that these activities are a source of creating competitive advantage, because, specific advantages are created with shortening of product production cycle which will gain customer's satisfaction. (Michael Tracey and et al, 2005)

Despite significance of current subjects and concept of supply chain management, very few empirical studies have been carried out on the effect of supply chain management on the organizational performance. Therefore, in this study, we want to know that: "How will supply chain management activities affect organizational performance (marketing and financial)?"

***Objectives of Study:***

The key objective of this study is to specify "Will implementation of a strategy based on universality and integration, (both with customers and suppliers and also process), increase organizational performance in supply chain management activities?"

Moreover this objective, other objectives are followed up in this study which comes as follows:

- 1- Study of relationship between supply chain management strategy and logistics performance
- 2- Study of relationship between supply chain management strategy and organizational performance (marketing and financial)
- 3- Study of relationship between logistics performance and organizational performance (marketing and financial)
- 4- Study of relationship between marketing performance and financial performance

### ***Theoretical Framework and Background of Research:***

In previous, managers were trying to improve performance of organization based on what had been defined within the framework of their duties merely. But supply chain managers should consider that how much organizational strategies, as used by the managers of the organization, will affect on chain participators? Because, it is possible that effort to maximize performance of organization may diminish negative effect on performance of supply chain and may increment its competitive advantage. Supply chain performance will be maximized only when we select an intra-organizational strategy, based on which, all members are cooperating with each other for maximizing chain value. Thereby, additional cost and time of one part is restored by the other part and chain performance and eventually, performance of the organization will be increased. But if each of chain members carried out their duties to maximize value of unit of their activity, the result of this activity will merely increase unnecessary costs. (Chopra and Meindl, 2004)

Creating value added for final customer is the main objective of supply chain management with the aim of reducing costs generally and such value added should be reflected to customers in cost, quality, flexibility and delivery of product or service which are components of supply chain. (Kenneth, et al, 2008)

In 1997, Morash and Clinton presented a design as a base for conducting research activities on supply chain in future. In this design, empowerment of logistics and transport established relationship between supply chain structure and its performance. Winster (2003) assumed that there is a positive relationship between logistics strategy and organizational performance. Stank (2002) and Lin (2006) placed special emphasis on the universality of logistics processes in the length of supply chain for better meeting of customer's demands. Lai, K and Cheng (2003) emphasized on the importance of transport logistics in supply chain because, providers of logistics services establish relationship between suppliers, producers, sellers and end consumers. They state that providers of logistics services should concentrate on increasing supply chain performance, based on which, performance of the organization will be improved. Kenneth and et al (2008) studied on the effect of supply chain management strategy on logistics performance and organizational performance. Sample of his study included senior and operational managers working in production factories in the United States of America. They presented a model that logistics performance was affected by supply chain management strategy, based on which, stated that supply chain management strategy and logistics performance affect financial and marketing performance. But in this study, we have used a logistics performance model for studying relationship between supply chain management strategy and organizational performance, that is, logistics performance which affected by supply chain management strategy. It should be noted that logistics performance and supply chain management strategy will affect organizational performance.

The conceptual model of this study is as follows:

- **Logistics performance**
- **Marketing performance**
- **Supply Chain Management Strategy (SCM)**
- **Financial performance**

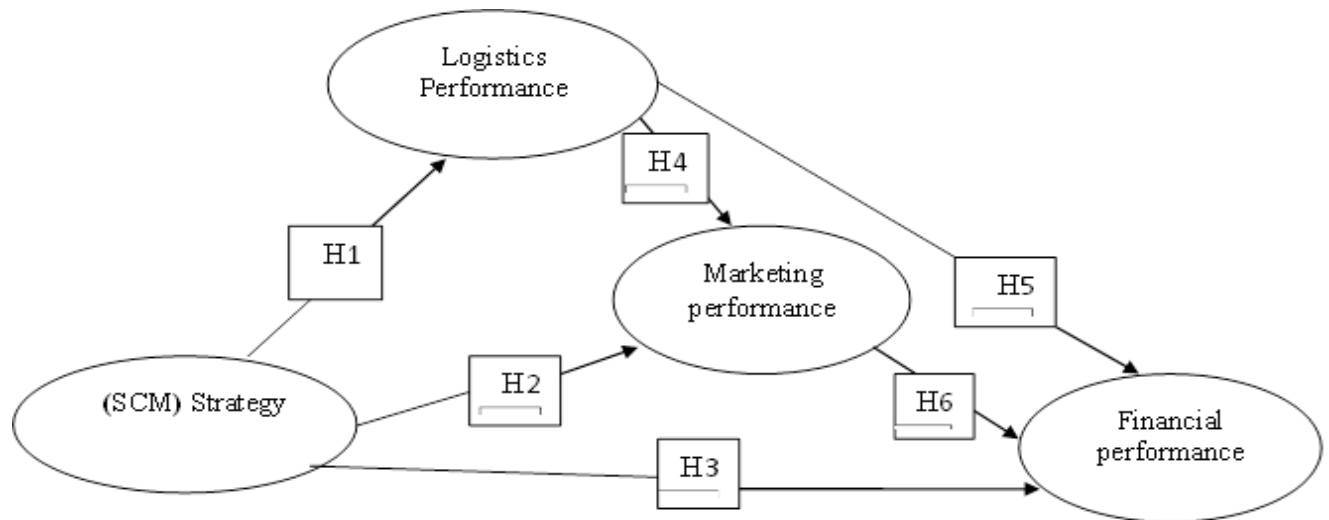


Figure.1

Research Conceptual Model (Kenneth and et al, 2008)

### Research Hypotheses:

Based on the relations shown within the theoretical framework, research hypotheses are as follows:

1<sup>st</sup> Hypothesis: There is a significant relationship between supply chain management strategy and logistics performance.

2<sup>nd</sup> Hypothesis: There is a significant relationship between supply chain management strategy and marketing performance.

3<sup>rd</sup> Hypothesis: There is a significant relationship between supply chain management strategy and financial performance.

4<sup>th</sup> Hypothesis: There is a significant relationship between logistics performance and marketing performance.

5<sup>th</sup> Hypothesis: There is a significant relationship between logistics performance and financial performance.

6<sup>th</sup> Hypothesis: There is a significant relationship between marketing performance and financial performance.

### Definition of Research Operational Variables and Concepts:

#### Supply Chain Management Strategy:

Supply chain management strategy is defined to a strategy which can 1- set up universality and integration in trade activities (purchasing, producing, selling and logistics) which is carried out in the length of chain, 2- set up maximum value for end users, and for setting up this strategy, the activities should be applied that improve cooperation and confidence relation between chain participants. (Cohen, S and Roussel, 2005 and Wisner, 2003)

#### Logistics Performance:

Cohn Siyal (2007), professor in supply chain management, states: “Logistics is one of the important parts of supply chain management which includes planning, executing and controlling reverse or progressive movements, transporting, warehousing materials, services and information related to meeting customers’ demand. In this study, we state logistics

performance as follows: “Ability of delivering goods and services to appropriate amount and in logical time, according to the requirement of customer.” Such ability can be evaluated with customer satisfaction, delivery speed, delivery flexibility, delivery dependability) (Bowersox, et al, 2000)

In this study, we use five criterias of delivery speed, delivery flexibility, order full capacity, responsiveness, and delivery dependability. (Kenneth, et al, 2000)

#### ***Marketing Performance:***

Marketing performance shows ability of organization in increasing sales and market share growth than its rival. (Green, K. W, Jr. and Inman, 2005 and Green and et al, 2006)

In this study, average market share growth, average sales volume growth and average sales (in dollars) growth are used for the evaluation of this ability in comparison with other rivals of the industry. (Kenneth, et al, 2008)

#### ***Financial Performance:***

Financial performance shows profitability of the organization and return on investment in comparison with the rivals. (Green, et al, 2004)

Return on sales, profit growth and average profit and return on investment are used for the evaluation of this variable. (Kenneth, et al, 2008)

#### ***Methodology:***

Method of its cognition is a basis of value of any science and it is rely on its methodology. Methodology is a set of rules, tool, and systematic and authentic ways for studying realities, discovery of unknowns, and attaining to solve problems. (Khaki, 2004, 202)

The methodology sets that how a research proposition is approved or rejected. The scientific researches are divided into the groups based on the objective: 1. fundamental, 2. Applied and developmental (Sarmad, et al, 2009)

The present study, which deals with development of knowledge in a specific field, is an applied research. Moreover, this study is about correlation type in terms of identifying percentage of relationship and direction, severity and type of relationship between supply chain management strategy, logistics performance and organizational performance.

#### **Subjects, Sampling Method and Sample Size:**

Subject of study includes all elements which subject of a specific study is confirmed on the subject and it can be argued. (Hooman, 2004, 167)

Production and operation managers working in large and active production companies of Khuzestan Province is subject of the present study.

Based on the latest statistics released by Data and Statistics Department of Khuzestan Province Industries and Mines Department General (2010), total number of these production companies in Khuzestan Province stood at 2231.

Of total 2231, 180 of which are busy active powerfully as large production companies (these companies have employed more than 50-manpower).

In this study, researcher is after evaluating and studying subject of research in large and active production companies of Khuzestan Province on one hand and generalizing results of the research to his total subjects on the other hand. Therefore, random sampling method has been used in this study as follows: the number of large and active production companies has first been selected based on sample size and questionnaire has been submitted to the production and operation managers who have obtained enough information on the performance of organization and supply chain management. With due observance to the limited volume of subject and use of relationship of the limited subject, sample size has equaled to 123.

Due to the observance to the probability of lack of returning some questionnaires, 200 questionnaires were sent to 140 large and active production companies in general; in which, 150 cases of answers had been found applicable.

***Measurement Tool and Data Collection Method:***

In this paper, measurement tool is the questionnaire which has been designed and compiled by Kenneth and et al in 2008.

Since validity and reliability of evaluation tool in each study were necessary, survey was taken from researchers and thinkers in the field of researching with relation to the accuracy rate and transparency of questions in questionnaires to take into consideration of validity of questionnaire.

Accordingly, survey was carried out from a number of specialists of this field, such as reader and advisor professor, to pay attention to the questionnaire and its questions.

Eventually, validity of the questionnaire was confirmed.

Cronbach's Alpha Coefficient method was used for the measurement of reliability. Thus, alpha was calculated through the application of SPSS software after presentation of 30 questionnaires as pretest.

Based on the obtained results, reliability coefficient of the questionnaire stands at above 0.7 thanks to the variables which shows that the specified questionnaire enjoys enough stability and reliability.

***Data Analysis Method:***

Due to the observance to the methodology, analysis of research questions of the study is related to the correlation method which was carried out in two inferential and descriptive statistics levels. In descriptive section, statistical analysis such as frequencies and percent was used. In inferential statistics, Pearson Correlation Coefficient, Coefficient of Determination, Multivariate Regression Analysis was used thanks to the nature and level of measurement of variables (relative, nominal, ordinal and distance). Since model of this research is of a structural equation model, Path Analysis Method was used for evaluating it. It should be noted that Path Analysis Method is a technique which enable us to comprehend relative significance of direct and indirect bonds and neutrality of the model with a set of data as well. This study follows two aims: 1- Identifying existence of relationship, 2- setting direction, severity and type of relationship between variables.

Significant level has been considered  $\alpha=0.01$  for all hypotheses.

***Results and Proposals :***

The results, obtained from statistical analysis, showed that chain management strategy has established significant relationship with each of three types of performance (financial, marketing and logistics). Relationship and correlation with the organizational performance ( $r=0.489$ ) and marketing performance ( $r=0.445$ ) is found "weaker" but it is found "more" with the logistics performance ( $r=0.560$ )

Also, logistics performance has significant relationship with the organizational performance (financial and marketing). With due observance to the Beta coefficient in multivariate regression, it has left the highest effect on marketing performance. It should be noted that marketing performance leaves the highest effect on financial performance and correlation is very high between these two variables. ( $r=0.826$ )

The results, obtained from model analysis through the use of Path Analysis Method, showed that model enjoys fair fitting.

With the calculation of variables' direct and indirect effects, it was specified that the highest effect is related to the marketing performance variable which affects financial performance. The results obtained from correlation coefficient and multivariate regression coefficient showed authenticity of the last issue.

Marketing performance accepts the highest effect from logistics performance thanks to the results obtained from multivariate regression analysis and a superior logistics performance is originated from implementation of supply chain management strategy.

Implementation of supply chain management strategy results in improvement of logistics performance, based on which, marketing performance will be affected.

Since logistics performance has been considered as a basis of evaluation of supply chain management strategy, providers of logistics services should concentrate on increasing supply chain performance. Consequently, performance of the organization will be increased.

By the way, quality goods and services can be presented according to the requirement of customers appropriately in the shortest time possible and with fair price through implementation of a strategy based on universality and integration with customers and suppliers, processes and activities, and implementation of those activities which improve and intensify cooperation and trust relationship among participants.

Customer Relationship Management (CRM) is a necessary infrastructure for the implementation of universality and integration with customers. Universality and integration with the suppliers requires their strategic cooperation and collaboration in all production processes.

Eventually, information technology (IT) is one of necessary infrastructures for establishing integration in supply chain processes and activities. Implementation of supply chain management strategy will result in improvement of logistics performance, in which, marketing performance will be affected. Since logistics performance has been considered as a basis of evaluation of supply chain management strategy, providers of logistics services should concentrate on increasing supply chain performance, based on which, performance of the organization will be increased as well. Managers of industries and companies are proposed to take this issue into serious consideration thanks to the severe and positive effect of marketing performance on financial performance of companies.

At last, marketing performance is the most important variable affecting financial performance of companies. It should be noted that marketing performance is severely affected by the logistics performance as a result of implementation of supply chain management strategy. Thus, making decision and implementing an appropriate chain management strategy is vital for managers of production companies.

Since production companies should go after establishing value for end customer, they can attain these objectives only through implementing a supply chain management strategy based on universality and integration (universality and integration with customers, suppliers and universality and integration in intra-organizational processes and activities).



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